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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,148	10/27/2003	Andrey Vyshedskiy		5886

7590 02/24/2006  
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EXAMINER

PATEL, JOY

ART UNIT PAPER NUMBER

3766

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Please find below and/or attached an Office communication concerning this application or proceeding.

T.P

<b>Office Action Summary</b>	<b>Application No.</b> 10/692,148	<b>Applicant(s)</b> VYSHEDSKIY ET AL.	
	<b>Examiner</b> Joy P. Patel	<b>Art Unit</b> 3766	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 27 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/27/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Oath/Declaration***

1. The oath/declaration does not claim priority to the provisional application mentioned in the specification.

### ***Specification***

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because it exceeds the 150-word limit discussed above. Correction is required. See MPEP § 608.01(b).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-22 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure, which goes to make up the device, must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited.

4. In regard to claim 1, the applicant claims a method yet does not provide any steps within the claim
5. In regard to claim 2, the applicant claims a device to perform the method of claim 1, but it is improperly written. The claim should be rewritten to read something similar to: "The method of claim 1, wherein the computing device is selected from a group consisting of..."
6. In regard to claims 3-11, these claims should follow the same pattern shown for claim 2.
7. In regard to claim 12, the claim, in its current form, is written more like a preamble and does not contain any method steps, although it says the device is performing the method steps of claim 1. It is suggested that the

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claim be modified to: "A method of wired or wireless physiologic data acquisition via sound input port of a stethoscope, using amplitude modulation of data with one or more carrier frequencies, wherein the stethoscope is comprised of: (a) a stethoscope, (b), an electrocardiograph, and (c) EKG electrodes, whereby a medical practitioner..." or something similar. Furthermore, claim 12 claims that the stethoscope contains an "electrocardiograph". However, there is no mention that the stethoscope itself contains an "electrocardiograph" within the specification. The applicant, however, does disclose that the stethoscope is used to generate an electrocardiograph (see specifications, page 9, paragraph 2).

8. In regard to claim 13, it is rejected as being dependent upon a rejected base claim 12. However, if claim 12 were corrected, this rejection would be overcome.
9. In regard to claim 14, it is also improperly written. It is suggested that claim 14 be modified to read: "The EKG stethoscope of claim 12 wherein visualizing both phonocardiogram and EKG concurrently on the screen of the computing device occurs in either the stack mode or superimposed mode" or something similar.
10. In regard to claims 15-21, they should be modified in a manner similar to claim 14.
11. In regard to claim 22, it should be modified in a manner similar to claim 12.

***Claim Objections***

12. Claim 10 is objected to because of the following informalities: in line 2, "multiple cannels" should be changed to "multiple channels". Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1, 4-6, 10, 12, 13, 15, 18, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Little et al. (US 4,362,164) which incorporates US patent 4,428,380 by Wong et al.
14. In regard to claims 1 and 12, Little et al., discloses an electronic stethoscope which is used to simultaneously record both the ECG and the PCG of the patient (column 6, lines 2-6) and has EKG electrodes A, B, and G (Column 6, lines 16-21). See also figure 4 and column 6, lines 2-65). Little further discloses that both the ECG and PCG signals are sent through amplifiers which perform "amplitude modulation" (Column 6, lines 30-38 and lines 41-43). Furthermore, Little has incorporated the Wong reference in Column 5, lines 58-61. Wong discloses the problems with the

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current carrier frequencies used in phonocardiogram analysis in column 3, lines 19-35). Wong goes on to disclose that his invention has 3 carrier frequencies which can be used to hear various heart sounds (Column 13, lines 7-10). Furthermore, Wong discloses that the device produces "simultaneous electrical representations of the electrical and acoustical (heart sound) activity of the heart..."(Abstract, lines 1-3).

15. In regard to claim 4, see rejections for claims 1 and 13 and figure 4 of the Little patent. Furthermore, Little discloses that the ECG input and PCG input are processed in separate circuits (Column 6, lines 32-38). Therefore, there are two inputs used in this device with multiple carrier frequencies.
16. In regard to claim 5, see rejection for claim 1. Here, Wong discloses 3 carrier frequencies, none of which overlap.
17. In regard to claim 6, Little discloses that the ECG and PCG signals are processed and then sent to the CPU for displaying purposes (See column 6, lines 39-60; See also Figure 4). Therefore, the carrier frequencies are supplied outside of the computing device (CPU), which further modulates the data (see Column 6, lines 51-65).
18. In regard to claim 10, Little discloses that his device is recording both ECG and PCG signals and processing them in two different circuits and then sending the information to the CPU (Column 6, lines 39-60). Therefore, the device is transmitting multiple channels (2, one for PCG and one for ECG) to the microphone port of the computing device (CPU)

19. In regard to claim 13, see Wong, column 4, lines 22-37. Here, Wong discloses, "From the ECG signal, an annotation signal is derived in which a pulse corresponds in time with the QRS complex. This pulsed signal is then combined with the heart sound signal to produce an annotated heart sound signal. The annotated heart sound signal (EAHS)..." (Column 4, lines 26-31). Furthermore, the ECG signal is filtered and amplified using a variety of filters, including a bandpass filter with a range of 0.5 to 100Hz, which is considered by the examiner to be a "carrier frequency" (See column 5, line 62 – Column 6, line 20).
20. In regard to claim 15, see Little, Figure 4. Here, one can see electrodes A, B, and G on the chest piece of the stethoscope.
21. In regard to claim 16, see column 3, lines 34-45. Here, Little discloses that the production of 3 separate but interrelated signals by the electrodes in the bell are representative of the conventional 3-lead ECG when the electrodes are in contact with a patient's skin. Furthermore, since the ECG wires do record an ECG signal, they are considered by the examiner to be "standard wired EKG leads".
22. In regard to claim 18, Little discloses what a standard electrocardiogram signal looks like in figure 2A, see column 4, lines 26 and 27 and figure 2a. Furthermore, since the device of Little displays an electrocardiogram, it inherently displays these peaks. Therefore, the examiner takes the



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position that the display is the signaling means for notifying the operator that events such as systole and diastole are occurring.

23. In regard to claim 19, see figure 4 of the little reference. Here, Little discloses element 15, which lead to the earpieces.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. Claims 2, 3, and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Little et al. (US 4,362,164) in view of Guion et al. (US 2005/0090755).
25. In regard to claim 2, Little discloses that the sound is input into a "sound input port" of a computing device, but only mentions that the computing device is a "central processing unit" with displaying means (Column 6, lines 51-60), but does not specifically disclose what type of device it is (computer, PDA, etc...). Guion, on the other hand, discloses an auscultatory sound recording device (18) wirelessly connected to a PDA (20), which analyzes the heart sound data. Guion goes on to disclose that the auscultatory sound recording device (18) can be an electronic

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stethoscope (see paragraph 40). It would have been obvious to one of ordinary skill in the art to modify the device of Little in view of the teachings of Guion to use a PDA as the computing device, since the PDA is a small, portable, computational device that can perform the same functions as a larger less portable CPU.

26. In regard to claim 3, Guion discloses that the PDA can use any wired or wireless link to communicate with the auscultatory sound recording device 18 (See paragraph 42).
27. In regard to claims 7-9, Guion discloses, "Communication link 19 may be a wired link, e.g., a serial or parallel communication link, a wireless infrared communication link, or a wireless communication link in accordance with a proprietary protocol or any of a variety of wireless standards, such as 802.11 (a/b/g), Bluetooth, and the like" (Paragraph 42, lines 6-11). In specific regard to claim 9, little discloses element 15 in figure 4, which leads to the earpieces. It would have been obvious to one of ordinary skill in the art to modify the device of Little in view of the teachings of Guion in order to create a wireless transmission means of transferring the sound data to the physician so that the physician would not be hindered by the wires currently connecting the chest piece to the earpieces.
28. Claims 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Little et al. (US 4,362,164) in view of Guion (US 2005/0090755).

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29. In regard to claim 11, Little, as discussed above, teaches a device that measures and records a patient's ECG and PCG signals. However, Little fails to teach that the signals are recorded in real-time. Guion, on the other hand, teaches a heart sound recording device that records and displays the data in real-time (See paragraph 15). It would have been obvious to one of ordinary skill in the art to modify the device of Little in view of the teachings of Guion in order to create a device that would provide ECG and PCG data in real-time in order to help a physician to make a proper diagnosis of the patient's condition.
30. In regard to claim 14, Little discloses, One signal being applicable in producing a display corresponding to an electrocardiogram (ECG) and the other signal being applicable in producing a display corresponding to a phonocardiogram (PCG) and annotated by the R wave of the electrocardiogram" (Column 3, lines 26-31). Little further discloses, "As described in the referenced co-pending application, the electrocardiogram and phonocardiogram displays may be selectively switched to the display device, or, in the alternative may be simultaneously displayed depending in part upon the size of the display required for specific diagnostic purposes (Column 7, lines 22-29). Furthermore, Wong discloses that the 2 waveforms are displayed in a "stacked mode" in column 6, lines 20-25, since he makes reference to the ECG signal taking up a vertical space (in terms of height (2V peak-to-peak); see also figure 1 for further clarification.

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31. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Little et al. (US 4,362,164) in view of Lee (US 5,737,429).
32. Little et al., as discussed above, discloses a stethoscope which records both ECG and PCG data from a patient, processes it, and sends it to a CPU for storing and displaying purposes. However, Little does not teach that the display is located on the stethoscope itself. Lee, on the other hand, teaches a stethoscope with a built in monitor that allows the physician to view the vital signs of the patient (See abstract and figure 1). It would have been obvious to one of ordinary skill in the art to modify the device of Little in view of the teachings of Lee in order to place the monitor on the stethoscope as opposed to having both devices be separate from one another to create a more compact device. Furthermore, the examiner takes the position that, lacking any criticality, it would have simply been a matter of design choice to move the display from its location on the stethoscope of Lee to a position directly on the chest piece as stated in the claim.
33. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Little et al. (US 4,362,164) in view of Lee (US 5,737,429) in further view of Guion et al. (US 2005/0090755).
34. In regard to claim 20, Little in view of Lee, as discussed above, teaches a stethoscope with a built in computing device and monitor, but fails to teach that the built in computing device is a PDA. Guion, on the other hand,

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teaches an electronic stethoscope linked to a PDA (which is capable of wireless communication with other devices) for data analysis. It would have been obvious to one of ordinary skill in the art to modify the device of Little in view of Lee in view of the teachings of Guion in order to create a compact device that could detect, process, and record both ECG and PCG data and communicate it with other devices in remote locations, if necessary.

An examination of this application reveals that applicant is unfamiliar with patent prosecution procedure. While an inventor may prosecute the application, lack of skill in this field usually acts as a liability in affording the maximum protection for the invention disclosed. Applicant is advised to secure the services of a registered patent attorney or agent to prosecute the application, since the value of a patent is largely dependent upon skilled preparation and prosecution. The Office cannot aid in selecting an attorney or agent.

A listing of registered patent attorneys and agents is available on the USPTO Internet web site <http://www.uspto.gov> in the Site Index under "Attorney and Agent Roster." Applicants may also obtain a list of registered patent attorneys and agents located in their area by writing to the Mail Stop OED, Director of the U. S. Patent and Trademark Office, PO Box 1450, Alexandria, VA 22313-1450

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***Allowable Subject Matter***

35. Claims 21 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joy P. Patel whose telephone number is 571-272-5556. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pezzuto can be reached on (571)-272-6996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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